We claim:

1. A method of controlling a vehicle having an adaptive cruise control system capable of obtaining the vehicle's lateral acceleration, said method comprising the steps of:

determining when the vehicle is in a turn based on a detected change in the vehicle's lateral acceleration; and

reducing the vehicle's speed according to the vehicle's position in the turn.

2. The method of claim 1 wherein said step of determining includes steps of

measuring the vehicle's speed;

measuring the vehicle's yaw rate; and

measuring the rate of change in the vehicle's yaw rate.

3. The method of claim 2 wherein said step of determining further includes a step of utilizing speed data corresponding to the vehicle's speed, yaw rate data corresponding to the vehicle's yaw rate, and yaw rate of change data corresponding to the rate of change in the vehicle's yaw rate, to calculate lateral acceleration data, said lateral acceleration data corresponding to the vehicle's lateral acceleration.

4. The method of claim 3 wherein said step of determining includes a step of filtering the lateral acceleration data to detect change in the vehicle's lateral acceleration.

5. The method of claim 4 wherein said step of determining further includes a step of processing the filtered lateral acceleration data to determine whether the vehicle is turning.

6. The method of claim 1 further comprising a step of determining the vehicle's position within the turn.

7. The method of claim 1 wherein said step of reducing the vehicle's speed includes a step of reducing the speed until the vehicle's lateral acceleration exceeds a predetermined limit.

8. The method of claim 1 further comprising the steps of:

detecting an object;

determining whether the object is in the vehicle's path during the turn; and

ignoring the object for braking purposes if the object is determined not to be in the vehicle's path during the turn.

9. The method of claim 8 wherein said step of determining whether the object is in the vehicle's path includes steps of:

measuring an object range;

measuring an object range rate;

measuring an object angle; and

determining the vehicle path's radius of curvature.

10. The method of claim 8 wherein said step of determining whether the object is in the vehicle's path includes a step of verifying whether the object is in the vehicle's path, said step of verifying including a step of using the yaw rate data, the yaw rate of change data, the speed data, range data corresponding to a distance between the vehicle and the object, range rate data corresponding to a rate that the distance between the vehicle and the object is changing, angle data corresponding to the object's angle in relation to the vehicle, and road curvature data corresponding to the vehicle path's radius of curvature.

11. A method of controlling a vehicle, said method comprising the steps of:

operating the vehicle in an adaptive cruise control mode such that the vehicle is traveling at a set speed;

determining whether the vehicle is in a turn in the vehicle's path by detecting change in the vehicle's lateral acceleration; and

when the vehicle is determined to be in the turn, reducing the vehicle's speed according to the vehicle's position in the turn, monitoring for objects and maintaining the vehicle's speed if an object is positioned out of the path of the vehicle.

12. The method of claim 11 wherein said step of determining whether the vehicle is in a turn includes steps of

measuring the vehicle's speed;

measuring the vehicle's yaw rate; and

measuring change in the vehicle's yaw rate.

13. The method of claim 12 wherein said step of determining whether the vehicle is in a turn further includes a step of using the vehicle's speed, the vehicle's yaw rate and a change in the vehicle's yaw rate to calculate the vehicle's lateral acceleration.

14. The method of claim 11 further comprising a step of determining the vehicle's position within the turn.

15. The method of claim 14 wherein said step of reducing the vehicle's speed includes a step of reducing the vehicle's speed until the vehicle's lateral acceleration exceeds a predetermined limit.

16. The method of claim 11 wherein said step of monitoring includes a step of detecting an object.

17. The method of claim 16 wherein said step of detecting an object includes steps of:

measuring object range;

measuring object range rate, said object range rate corresponding to a rate that the distance between the vehicle and the object is changing;

measuring object angle; and

determining the radius of curvature of the vehicle's path.

18. The method claim of 17 wherein said step of monitoring includes a step of determining whether the detected object is in the vehicle's path.

19. The method of claim 18 wherein said step of monitoring includes a step of verifying that the object is in the vehicle's path.

20. A method of controlling a vehicle operating in an adaptive cruise control mode and traveling at a set speed, said method comprising the steps of:

estimating a path for the vehicle in a turn;

associating the vehicle path with a first zone area, the first zone area including the turn; and

reducing the vehicle's speed when a detected object is determined to be in the first zone area and maintaining the vehicle's speed when the detected object is determined to be outside of the first zone area.

21. The method of claim 20 further comprising the steps of:

defining a second zone area outside of the first zone area;

detecting an object; and

determining whether the object is in one of the first and the second zone areas.

22. The method of claim 21 wherein said step of reducing includes a step of reducing the vehicle's speed when a detected object is determined to be within at least one of the first and the second zone areas and maintaining the vehicle's speed when a detected object is determined to be outside of both the first and the second zone areas.

23. The method of claim 20 further including steps of:

determining the vehicle's lateral acceleration;

detecting change in the vehicle's lateral acceleration to determine when the vehicle is in the turn; and

reducing the vehicle's speed according to the vehicle's position in the turn when the vehicle is determined to be in the turn.

24. The method of claim 23 wherein said step of determining the vehicle's lateral acceleration includes steps of:

measuring the vehicle's speed;

measuring the vehicle's yaw rate; and

measuring the rate of change in the vehicle's yaw rate.

25. The method of claim 24 wherein said step of determining the vehicle's lateral acceleration further includes a step of utilizing speed data corresponding to the vehicle's speed, yaw rate data corresponding to the vehicle's yaw rate, and yaw rate of change data corresponding to rate of change in the vehicle's yaw rate, to calculate lateral acceleration data, said lateral acceleration data corresponding to the vehicle's lateral acceleration.

26. The method of claim 25 wherein said step of detecting change in the vehicle's lateral acceleration includes a step of filtering the lateral acceleration data to detect the change.

27. The method of claim 24 wherein said step of detecting change in the vehicle's lateral acceleration further includes a step of evaluating the filtered lateral acceleration data to determine whether the vehicle is turning.

28. The method of claim 24 further comprising a step of determining the vehicle's position within the turn.

29. The method of claim 23 wherein said step of reducing the vehicle's speed includes a step of reducing the speed until the vehicle's lateral acceleration exceeds a predetermined limit.

30. The method of claim 21 wherein said step of determining whether the object is in one of the first and the second zone areas includes steps of:

measuring an object range corresponding to a distance between the vehicle and the object;

measuring an object range rate corresponding to a rate that the distance between the vehicle and the object is changing;

measuring an object angle corresponding to the object's angle in relation to the vehicle; and

determining road curvature corresponding to the vehicle path's radius of curvature.

31. The method of claim 30 further comprising a step of verifying that the object is in one of the first and second zone areas.

32. The method of claim 30 wherein said step of verifying includes a step of using the yaw rate data, the yaw rate of change data, the speed data, range data corresponding to the object range, range rate data corresponding to the object range rate, angle data corresponding to the object angle, and road curvature data corresponding to the road curvature to verify that the object is in one of the first and second zone areas.

33. A system for use in controlling a vehicle, said system including:

an adaptive cruise control system;

a controller in communication with said adaptive cruise control system and capable of determining when the vehicle is in a turn, said controller operative to reduce the vehicle's speed according to the vehicle's position in the turn;

at least one lateral acceleration sensor for generating a signal corresponding to the vehicle's lateral acceleration, said lateral acceleration sensor in electrical communication with said controller and operative to detect a change in the vehicle's lateral acceleration; and

at least one object detection sensor for detecting an object in the path of the vehicle during the turn, said object detection sensor in electrical communication with said controller, wherein said controller includes control logic operative to determine whether the object is in the vehicle's path during the turn and ignoring the object for braking purposes when the object is not determined to be in the vehicle's path.

34. The system of claim 33 wherein said object detection sensor includes means for generating

an object range signal corresponding to a distance between the vehicle and the object; and

an object angle signal corresponding to the object's angle in relation to the vehicle.

35. The system of claim 34 wherein said controller includes both means for measuring an object range rate corresponding to the rate in which the distance

between the vehicle and the object is changing, and means for determining a curvature corresponding to the radius of curvature of the vehicle's path, said curvature corresponding to road curvature data.

36. The system of claim 35 further comprising means for

measuring the vehicle's speed;

measuring the vehicle's yaw rate; and

measuring the rate of change in the vehicle's yaw rate.

37. The system of claim 36 wherein, upon said controller's determination that the object is in the vehicle's path, said controller uses yaw rate data corresponding to the vehicle's yaw rate, yaw rate of change data corresponding to the change in the vehicle's yaw rate, speed data corresponding to the vehicle's speed, range data corresponding to the object range signal, range rate data corresponding to the object range rate, angle data corresponding to the object angle signal, and road curvature data, to verify that the object is in the vehicle's path.

38. A method of controlling a vehicle in a turn, said method comprising the steps of:

measuring the vehicle's speed;

measuring the vehicle's lateral acceleration;

estimating the radius of curvature of the vehicle's path based on the vehicle's speed and lateral acceleration; and

when the combination of the vehicle's speed and the vehicle path's radius of curvature exceeds a predetermined maximum lateral acceleration limit, reducing the vehicle's speed.

39. The method of claim 1 further comprising a step of measuring the vehicle's lateral acceleration.

40. The method of claim 16 further comprising a step of measuring the vehicle's lateral acceleration.